

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108



### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011080

**Product Name:** SIRT1 FRET Assay Buffer (10X)

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Skin Corrosion/Irritation, Category 3	none	Warning	Causes mild skin irritation
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness

**GHS Hazard Phrases:**

H316: Causes mild skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**GHS Storage and Disposal Phrases:**

Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:**

Causes mild skin irritation.

Causes respiratory system irritation.

Causes serious eye irritation.

Material is irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**

No data available.

**LD 50 / LC 50:**

Please refer to Section 11.



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**Medical Conditions Generally Aggravated By** No data available.**Exposure:**

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Trizma base	77-86-1	6.0 %	201-064-4	R36/37/38	TY2900000
2. DL-Dithiothreitol	3483-12-3	0.077 %	222-468-7	R22-36/37/38	EK1610000
3. Magnesium chloride, hexahydrate	7791-18-6	0.813 %	NA	R36/37/38	OM2975000
4. Water	7732-18-5	93.11 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

##### 4.1.1 In Case of Inhalation:

Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

##### 4.1.2 In Case of Skin Contact:

Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

##### 4.1.3 In Case of Eye Contact:

Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

##### 4.1.4 In Case of Ingestion:

Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

#### 4.2 Important Symptoms and Effects, Both Acute and Delayed:

No data available.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

No data available.

### Section 5. Fire Fighting Measures

#### 5.1 Suitable Extinguishing Media:

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.

#### Unsuitable Extinguishing Media:

A solid water stream may be inefficient.

#### 5.2 Flammable Properties and Hazards:

No data available.

#### Flash Pt:

No data.

#### Autoignition Pt:

No data available.

#### Explosive Limits:

LEL: No data.

UEL: No data.

#### Hazardous Combustion Products:

No data available.

#### 5.3 Fire Fighting Instructions:

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

#### 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:

Avoid breathing vapors and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

#### 6.2 Environmental Precautions:

Take steps to avoid release into the environment, if safe to do so.

#### 6.3 Methods and Material For Containment and Cleaning Up:

Contain spill and collect, as appropriate.

Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Trizma base	77-86-1	No data.	No data.	No data.
2. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
3. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
4. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Trizma base	77-86-1	No data.	No data.	No data.
2. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
3. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
4. Water	7732-18-5	No data.	No data.	No data.

- Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:** ☐ Gas ☒ Liquid ☐ Solid
- Appearance and Odor:** No data available.
- pH:** 8.8
- Melting Point:** No data.
- Boiling Point:** No data.
- Flash Pt:** No data.
- Evaporation Rate:** No data.
- Vapor Pressure (vs. Air or mm Hg):** No data.
- Vapor Density (vs. Air = 1):** No data.
- Specific Gravity (Water = 1):** No data.



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**Solubility in Water:** No data.

**Autoignition Pt:** No data.

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

**9.2 Other Information**

**Percent Volatile:** No data.

### Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.

**10.2 Stability:** Unstable [ ] Stable [ X ]

**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

**10.4 Conditions To Avoid:** No data available.

**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]

**10.5 Incompatibility - Materials To Avoid:** strong oxidizing agents

**10.6 Hazardous Decomposition Or Byproducts:** carbon dioxide  
carbon monoxide  
nitrogen oxides

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

Trizma base - Toxicity Data: Oral LDLO (rabbit): 1,000 mg/kg; Oral TDLO (mouse): 3,000 mg/kg; Oral LD50 (rat) >3,000 mg/kg; Oral LD50 (mouse): 5,500 mg/kg; Oral TDLO (rat): 3,000 mg/kg;

**Chronic Toxicological Effects:** Trizma base - Investigated as a reproductive effector.  
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
See actual entry in RTECS for complete information.  
Trizma base RTECS Number: TY2900000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
2. DL-Dithiothreitol	3483-12-3	n.a.	n.a.	n.a.	n.a.
3. Magnesium chloride, hexahydrate	7791-18-6	n.a.	n.a.	n.a.	n.a.
4. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

### Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

### Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**14.1 LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.



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### 14.3 AIR TRANSPORT (ICAO/IATA)

**ICAO/IATA Shipping Name**

Not dangerous goods.

**Additional Transport Information:**

Transport in accordance with local, state, and federal regulations.

## Section 15. Regulatory Information

**European Community Hazard Symbol codes** Xi: Irritant**European Community Risk and Safety Phrases**

R36/37 - Irritating to eyes and respiratory system.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
2. DL-Dithiothreitol	3483-12-3	No	No	No	No
3. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
4. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Trizma base	77-86-1	HAP	No	Inventory	No
2. DL-Dithiothreitol	3483-12-3	No	No	Inventory	No
3. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
4. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:**

This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

## Section 16. Other Information

**Revision Date:**

05/30/2013

**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required

**SIRT1 (human recombinant) FRET Assay  
Reagent**

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

according to Regulation (EC) No. 1907/2006

Revision: 05/29/2013  
Supersedes Revision: 06/02/2008

**Section 1. Identification of the Substance/Mixture and of the**

- 1.1 Product Code:** 10011081
- Product Name:** SIRT1 (human recombinant) FRET Assay Reagent
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
- Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet**
- Company Name:** Cayman Chemical Company
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300
- Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887
- Information:** Cayman Chemical Company +1 (734)971-3335
- Web site address:** www.caymanchem.com

**Section 2. Hazards Identification**

- GHS Hazard Phrases:** Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:** No data available.
- GHS Response Phrases:** No data available.
- GHS Storage and Disposal Phrases:** Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
- Target Organs:** No data available.
- Medical Conditions Generally Aggravated By Exposure:** No data available.

**Section 3. Composition/Information on Ingredients**

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. SIRT1	NA	0.0 -5.0 %	NA	No phrases apply.	NA
2. Sodium phosphate monobasic, monohydrate	10049-21-5	< 0.9 %	NA	R36/37/38	WA1900000
3. Water	7732-18-5	>94.1 %	231-791-2	No phrases apply.	ZC0110000

**Section 4. First Aid Measures**

- 4.1 Description of First Aid Measures:**
- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.



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**4.2 Important Symptoms and Effects,**  
**Both Acute and Delayed:** No data available.

**4.3 Indication of any immediate medical**  
**attention and special treatment needed:** No data available.

## Section 5. Fire Fighting Measures

**5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.

**Unsuitable Extinguishing Media:** A solid water stream may be inefficient.

**5.2 Flammable Properties and Hazards:** No data available.

**Flash Pt:** No data.

**Autoignition Pt:** No data available.

**Explosive Limits:** LEL: No data. UEL: No data.

**Hazardous Combustion Products:** No data available.

**5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

## Section 6. Accidental Release Measures

**6.1 Protective Precautions, Protective**  
**Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation.  
As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,  
and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

**6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.

**6.3 Methods and Material For**  
**Containment and Cleaning Up:** Contain spill and collect, as appropriate.  
Transfer to a chemical waste container for disposal in accordance with local regulations.

## Section 7. Handling and Storage

**7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.

**7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.

**Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

## Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. SIRT1	NA	No data.	No data.	No data.
2. Sodium phosphate monobasic, monohydrate	10049-21-5	No data.	No data.	No data.
3. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. SIRT1	NA	No data.	No data.	No data.
2. Sodium phosphate monobasic, monohydrate	10049-21-5	No data.	No data.	No data.
3. Water	7732-18-5	No data.	No data.	No data.

**Protective Equipment Summary - Hazard**  
**Label Information:** Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety  
glasses Safety shower in work area Vent Hood

**8.2.1 Engineering Controls (Ventilation**  
**etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne  
levels below recommended exposure limits.

**8.2.2.1 Eye Protection:** Safety glasses

**8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves





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**Other Protective Clothing:** Lab coat**8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.**Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.**8.2.3 Environmental Exposure Controls:** No data available.

## Section 9. Physical and Chemical Properties

## 9.1 Information on Basic Physical and Chemical Properties

**Physical States:** ☐ Gas ☒ Liquid ☐ Solid**Appearance and Odor:** No data available.**pH:** 7.2**Melting Point:** No data.**Boiling Point:** No data.**Flash Pt:** No data.**Evaporation Rate:** No data.**Vapor Pressure (vs. Air or mm Hg):** No data.**Vapor Density (vs. Air = 1):** No data.**Specific Gravity (Water = 1):** No data.**Solubility in Water:** No data.**Autoignition Pt:** No data.**Explosive Properties:** No data available.**Oxidizing Properties:** No data available.

## 9.2 Other Information

**Percent Volatile:** No data.

## Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.**10.2 Stability:** Unstable ☐ Stable ☒**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.**10.4 Conditions To Avoid:** No data available.**10.3 Polymerization:** Will occur ☐ Will not occur ☒**10.5 Incompatibility - Materials To Avoid:** No data available.**10.6 Hazardous Decomposition Or Byproducts:** No data available.

## Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. SIRT1	NA	n.a.	n.a.	n.a.	n.a.
2. Sodium phosphate monobasic, monohydrate	10049-21-5	n.a.	n.a.	n.a.	n.a.
3. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.





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**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

## Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

## Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

## Section 14. Transport Information

### 14.1 LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name** Not dangerous goods.

### 14.1 LAND TRANSPORT (European ADR/RID)

**ADR/RID Shipping Name** Not dangerous goods.

### 14.3 AIR TRANSPORT (ICAO/IATA)

**ICAO/IATA Shipping Name** Not dangerous goods.

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

## Section 15. Regulatory Information

### European Community Hazard Symbol codes

No data available.

### European Community Risk and Safety Phrases

S24/25 - Avoid contact with skin and eyes.

S37/39 - Wear suitable gloves and eye/face protection.

### US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. SIRT1	NA	No	No	No	No
2. Sodium phosphate monobasic, monohydrate	10049-21-5	No	No	No	No
3. Water	7732-18-5	No	No	No	No

### Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. SIRT1	NA	No	No	No	No
2. Sodium phosphate monobasic, monohydrate	10049-21-5	No	No	No	No
3. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

## Section 16. Other Information

**Revision Date:** 05/29/2013

### Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required



# SAFETY DATA SHEET

## SIRT1 FRET Peptide

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Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

according to Regulation (EC) No. 1907/2006

Revision: 05/30/2013  
Supersedes Revision: 06/02/2008

### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011082  
**Product Name:** SIRT1 FRET Peptide

**1.2 Relevant identified uses of the substance or mixture and uses advised against**  
**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887  
**Information:** Cayman Chemical Company +1 (734)971-3335  
**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

**GHS Hazard Phrases:** Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.

**GHS Precaution Phrases:** No data available.

**GHS Response Phrases:** No data available.

**GHS Storage and Disposal Phrases:** Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:** No data available.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases
1. SIRT1 FRET Peptide	NA	100.0 %	NA	No phrases apply.

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

**4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

**4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** No data available.

**4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

**5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.

**Unsuitable Extinguishing Media:** A solid water stream may be inefficient.

**5.2 Flammable Properties and Hazards:** No data available.

**Flash Pt:** No data.

**Autoignition Pt:** No data available.

**Explosive Limits:** LEL: No data. UEL: No data.

**Hazardous Combustion Products:** No data available.

**5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

**6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation.  
As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

**6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.

**6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate.  
Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

**7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.

**7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.

**Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. SIRT1 FRET Peptide	NA	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. SIRT1 FRET Peptide	NA	No data.	No data.	No data.

**Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood

**8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**8.2.2.1 Eye Protection:** Safety glasses

**8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

**8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.

**Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.



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## SIRT1 FRET Peptide

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**8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

**9.1 Information on Basic Physical and Chemical Properties****Physical States:** ☐ Gas ☒ Liquid ☐ Solid**Appearance and Odor:** Solution**pH:** 8.8**Melting Point:** No data.**Boiling Point:** No data.**Flash Pt:** No data.**Evaporation Rate:** No data.**Vapor Pressure (vs. Air or mm Hg):** No data.**Vapor Density (vs. Air = 1):** No data.**Specific Gravity (Water = 1):** No data.**Solubility in Water:** No data.**Autoignition Pt:** No data.**Explosive Properties:** No data available.**Oxidizing Properties:** No data available.**9.2 Other Information****Percent Volatile:** No data.

### Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.**10.2 Stability:** Unstable ☐ Stable ☒**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.**10.4 Conditions To Avoid:** No data available.**10.3 Polymerization:** Will occur ☐ Will not occur ☒**10.5 Incompatibility - Materials To Avoid:** No data available.**10.6 Hazardous Decomposition Or Byproducts:** No data available.

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. SIRT1 FRET Peptide	NA	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

### Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.

Runoff from fire control or dilution water may cause pollution.

### Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.



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## SIRT1 FRET Peptide

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### Section 14. Transport Information

#### 14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name Not dangerous goods.

#### 14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name Not dangerous goods.

#### 14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

#### European Community Hazard Symbol codes

No data available.

#### European Community Risk and Safety Phrases

S24/25 - Avoid contact with skin and eyes.

S37/39 - Wear suitable gloves and eye/face protection.

#### US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. SIRT1 FRET Peptide	NA	No	No	No	No

#### Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. SIRT1 FRET Peptide	NA	No	No	No	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

### Section 16. Other Information

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#### Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108



### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011083

**Product Name:** SIRT1 FRET NAD+

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Skin Corrosion/Irritation, Category 3	none	Warning	Causes mild skin irritation
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness

**GHS Hazard Phrases:**

H316: Causes mild skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**GHS Storage and Disposal Phrases:**

Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:**

Causes mild skin irritation.

Causes respiratory system irritation.

Causes serious eye irritation.

Material is irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**

No data available.

**Medical Conditions Generally Aggravated By Exposure:**

No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. NAD+	53-84-9	3.6 %	200-184-4	R36/37/38	JJ3450000
2. Trizma base	77-86-1	0.6 %	201-064-4	R36/37/38	TY2900000
3. DL-Dithiothreitol	3483-12-3	0.007 %	222-468-7	R22-36/37/38	EK1610000
4. Magnesium chloride, hexahydrate	7791-18-6	0.08 %	NA	R36/37/38	OM2975000
5. Water	7732-18-5	95.713 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

##### 4.1.1 In Case of Inhalation:

Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

##### 4.1.2 In Case of Skin Contact:

Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

##### 4.1.3 In Case of Eye Contact:

Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

##### 4.1.4 In Case of Ingestion:

Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

#### 4.2 Important Symptoms and Effects, Both Acute and Delayed:

No data available.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

No data available.

### Section 5. Fire Fighting Measures

#### 5.1 Suitable Extinguishing Media:

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.

#### Unsuitable Extinguishing Media:

A solid water stream may be inefficient.

#### 5.2 Flammable Properties and Hazards:

No data available.

#### Flash Pt:

No data.

#### Autoignition Pt:

No data available.

#### Explosive Limits:

LEL: No data.

UEL: No data.

#### Hazardous Combustion Products:

No data available.

#### 5.3 Fire Fighting Instructions:

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

#### 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:

Avoid breathing vapors and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

#### 6.2 Environmental Precautions:

Take steps to avoid release into the environment, if safe to do so.

#### 6.3 Methods and Material For Containment and Cleaning Up:

Contain spill and collect, as appropriate.

Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

#### 7.1 Precautions To Be Taken in Handling:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid prolonged or repeated exposure.

#### 7.2 Precautions To Be Taken in Storing:

Keep container tightly closed.

Store in accordance with information listed on the product insert.





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## SIRT1 FRET NAD+

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**Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. NAD+	53-84-9	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. NAD+	53-84-9	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.

**Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood

**8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**8.2.2.1 Eye Protection:** Safety glasses

**8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

**8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.

**Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.

**8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

#### 9.1 Information on Basic Physical and Chemical Properties

**Physical States:** [ ] Gas [ X ] Liquid [ ] Solid

**Appearance and Odor:** Solution

**pH:** 8.8

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

**Vapor Pressure (vs. Air or mm Hg):** No data.

**Vapor Density (vs. Air = 1):** No data.

**Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.

**Autoignition Pt:** No data.

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

### 9.2 Other Information

**Percent Volatile:** No data.

## Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.

**10.2 Stability:** Unstable [ ] Stable [ X ]

**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

**10.4 Conditions To Avoid:** No data available.

**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]

**10.5 Incompatibility - Materials To Avoid:** No data available.

**10.6 Hazardous Decomposition Or Byproducts:**  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
phosphorus

## Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

NAD<sup>+</sup> - Toxicity Data: Intraperitoneal LD50 (mouse): 4,333 mg/kg;

### Chronic Toxicological Effects:

NAD<sup>+</sup> - Investigated as a mutagen.

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.

See actual entry in RTECS for complete information.

NAD<sup>+</sup> RTECS Number: UU3450000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. NAD <sup>+</sup>	53-84-9	n.a.	n.a.	n.a.	n.a.
2. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
3. DL-Dithiothreitol	3483-12-3	n.a.	n.a.	n.a.	n.a.
4. Magnesium chloride, hexahydrate	7791-18-6	n.a.	n.a.	n.a.	n.a.
5. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

## Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.

Runoff from fire control or dilution water may cause pollution.

## Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

## Section 14. Transport Information

### 14.1 LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name** Not dangerous goods.

### 14.1 LAND TRANSPORT (European ADR/RID)

**ADR/RID Shipping Name** Not dangerous goods.

### 14.3 AIR TRANSPORT (ICAO/IATA)

**ICAO/IATA Shipping Name** Not dangerous goods.

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

**European Community Hazard Symbol codes** Xi: Irritant

**European Community Risk and Safety Phrases**

- R36/37 - Irritating to eyes and respiratory system.  
 S24/25 - Avoid contact with skin and eyes.  
 S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. NAD+	53-84-9	No	No	No	No
2. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
3. DL-Dithiothreitol	3483-12-3	No	No	No	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. NAD+	53-84-9	No	No	Inventory	No
2. Trizma base	77-86-1	HAP	No	Inventory	No
3. DL-Dithiothreitol	3483-12-3	No	No	Inventory	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

### Section 16. Other Information

**Revision Date:** 05/30/2013

**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108



### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011084

**Product Name:** SIRT1 FRET Stop Solution

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Acute Toxicity: Oral, Category 5	none	Warning	May be harmful if swallowed
Skin Corrosion/Irritation, Category 3	none	Warning	Causes mild skin irritation
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness

**GHS Hazard Phrases:**

H303: May be harmful if swallowed.

H316: Causes mild skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**GHS Storage and Disposal Phrases:**

Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:**

Causes mild skin irritation.

Causes respiratory system irritation.

Causes serious eye irritation.

Material is irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:** Eyes, Kidneys, Liver.

**Medical Conditions Generally Aggravated By** No data available.

**Exposure:**

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Nicotinamide	98-92-0	1.22 %	202-713-4	R36/37/38	QS3675000
2. Trizma base	77-86-1	0.6 %	201-064-4	R36/37/38	TY2900000
3. DL-Dithiothreitol	3483-12-3	0.007 %	222-468-7	R22-36/37/38	EK1610000
4. Magnesium chloride, hexahydrate	7791-18-6	0.08 %	NA	R36/37/38	OM2975000
5. Water	7732-18-5	98.093 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** No data available.
- 4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** No data available.
- Flash Pt:** No data.
- Autoignition Pt:** No data available.
- Explosive Limits:** LEL: No data. UEL: No data.
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

- 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- 6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Nicotinamide	98-92-0	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Nicotinamide	98-92-0	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.

- Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:** ☐ Gas    ☒ Liquid    ☐ Solid
- Appearance and Odor:** Solution
- pH:** 8.8
- Melting Point:** No data.
- Boiling Point:** No data.
- Flash Pt:** No data.
- Evaporation Rate:** No data.
- Vapor Pressure (vs. Air or mm Hg):** No data.



# SAFETY DATA SHEET

## SIRT1 FRET Stop Solution

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**Vapor Density (vs. Air = 1):** No data.

**Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.

**Autoignition Pt:** No data.

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

### 9.2 Other Information

**Percent Volatile:** No data.

## Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.

**10.2 Stability:** Unstable [ ] Stable [ X ]

**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

**10.4 Conditions To Avoid:** No data available.

**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]

**10.5 Incompatibility - Materials To Avoid:** strong oxidizing agents

**10.6 Hazardous Decomposition Or Byproducts:** carbon dioxide  
carbon monoxide  
nitrogen oxides

## Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

Nicotinamide - Toxicity Data: Oral LD50 (rat): 3,500 mg/kg;

### Chronic Toxicological Effects:

Nicotinamide - Investigated as a mutagen.

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.

See actual entry in RTECS for complete information.

Nicotinamide RTECS Number: QS3675000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Nicotinamide	98-92-0	n.a.	n.a.	n.a.	n.a.
2. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
3. DL-Dithiothreitol	3483-12-3	n.a.	n.a.	n.a.	n.a.
4. Magnesium chloride, hexahydrate	7791-18-6	n.a.	n.a.	n.a.	n.a.
5. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

## Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

## Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

## Section 14. Transport Information

### 14.1 LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name** Not dangerous goods.

### 14.1 LAND TRANSPORT (European ADR/RID)





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## SIRT1 FRET Stop Solution

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ADR/RID Shipping Name Not dangerous goods.

**14.3 AIR TRANSPORT (ICAO/IATA)**

ICAO/IATA Shipping Name Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

European Community Hazard Symbol codes Xi: Irritant

**European Community Risk and Safety Phrases**

R36/37 - Irritating to eyes and respiratory system.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Nicotinamide	98-92-0	No	No	Yes-Cat. N503	No
2. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
3. DL-Dithiothreitol	3483-12-3	No	No	No	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Nicotinamide	98-92-0	No	No	Inventory	No
2. Trizma base	77-86-1	HAP	No	Inventory	No
3. DL-Dithiothreitol	3483-12-3	No	No	Inventory	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

### Section 16. Other Information

Revision Date: 05/30/2013

**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108



### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011085

**Product Name:** SIRT1 FRET Developer

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Skin Corrosion/Irritation, Category 3	none	Warning	Causes mild skin irritation
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Respiratory Sensitization, Category 1	Health hazard	Danger	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Target Organ Systemic Toxicity (single exposure), Category 3	Exclamation point	Warning	May cause respiratory irritation, or may cause drowsiness and dizziness

**GHS Hazard Phrases:**

H316: Causes mild skin irritation.

H319: Causes serious eye irritation.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335: May cause respiratory irritation.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P284: Wear respiratory protection. as specified by the manufacturer/supplier or the competent authority.

**GHS Response Phrases:**

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

P304+341: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

P342+311: If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**GHS Storage and Disposal Phrases:**

Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:**

Causes mild skin irritation.

Causes respiratory system irritation.

Causes serious eye irritation.

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:** No data available.

**Medical Conditions Generally Aggravated By** No data available.

**Exposure:**

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	< 0.9 %	276-716-4	R36/37/38-42	NA
2. Trizma base	77-86-1	< 0.9 %	201-064-4	R36/37/38	TY2900000
3. DL-Dithiothreitol	3483-12-3	< 0.9 %	222-468-7	R22-36/37/38	EK1610000
4. Magnesium chloride, hexahydrate	7791-18-6	> 0.9 %	NA	R36/37/38	OM2975000
5. Water	7732-18-5	>96.4 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** No data available.

**4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
 Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** No data available.
- Flash Pt:** No data.
- Autoignition Pt:** No data available.
- Explosive Limits:** LEL: No data. UEL: No data.
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

- 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation.  
 As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

- 6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- 6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate.  
Transfer to a chemical waste container for disposal in accordance with local regulations.

## Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

## Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.

- Protective Equipment Summary - Hazard Label Information:** Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

## Section 9. Physical and Chemical Properties

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:** ☐ Gas    ☒ Liquid    ☐ Solid
- Appearance and Odor:** Solution
- pH:** 8.8
- Melting Point:** No data.



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**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

**Vapor Pressure (vs. Air or mm Hg):** No data.

**Vapor Density (vs. Air = 1):** No data.

**Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.

**Autoignition Pt:** No data.

**Explosive Properties:** No data available.

**Oxidizing Properties:** No data available.

**9.2 Other Information**

**Percent Volatile:** No data.

### Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.

**10.2 Stability:** Unstable [ ] Stable [ X ]

**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

**10.4 Conditions To Avoid:** No data available.

**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]

**10.5 Incompatibility - Materials To Avoid:** No data available.

**10.6 Hazardous Decomposition Or Byproducts:** No data available.

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	n.a.	n.a.	n.a.	n.a.
2. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
3. DL-Dithiothreitol	3483-12-3	n.a.	n.a.	n.a.	n.a.
4. Magnesium chloride, hexahydrate	7791-18-6	n.a.	n.a.	n.a.	n.a.
5. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

### Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

### Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

### Section 14. Transport Information

#### 14.1 LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name** Not dangerous goods.

#### 14.1 LAND TRANSPORT (European ADR/RID)



# SAFETY DATA SHEET

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ADR/RID Shipping Name Not dangerous goods.

**14.3 AIR TRANSPORT (ICAO/IATA)**

ICAO/IATA Shipping Name Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

European Community Hazard Symbol codes Xi: Irritant

**European Community Risk and Safety Phrases**

R36/37 - Irritating to eyes and respiratory system.

R42 - May cause sensitization by inhalation.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	No	No	No	No
2. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
3. DL-Dithiothreitol	3483-12-3	No	No	No	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Endoproteinase Lys-C from Lysobacter enzymogenes	72561-05-8	No	No	No	No
2. Trizma base	77-86-1	HAP	No	Inventory	No
3. DL-Dithiothreitol	3483-12-3	No	No	Inventory	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

### Section 16. Other Information

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**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

according to Regulation (EC) No. 1907/2006

Revision: 05/30/2013  
Supersedes Revision: 06/02/2008

### Section 1. Identification of the Substance/Mixture and of the

**1.1 Product Code:** 10011086

**Product Name:** SIRT1 FRET Fluorophore

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Relevant identified uses:** For research use only, not for human or veterinary use.

**1.3 Details of the Supplier of the Safety Data Sheet**

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

**GHS Hazard Phrases:** Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.

**GHS Precaution Phrases:** No data available.

**GHS Response Phrases:** No data available.

**GHS Storage and Disposal Phrases:** Please refer to Section 7 for Storage and Section 13 for Disposal information.

**2.3 Adverse Human Health Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:** No data available.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. N-Methylantranilic acid	119-68-6	0.1 %	204-343-9	R36/37/38	CB3300000
2. Trizma base	77-86-1	0.6 %	201-064-4	R36/37/38	TY2900000
3. DL-Dithiothreitol	3483-12-3	0.007 %	222-468-7	R22-36/37/38	EK1610000
4. Magnesium chloride, hexahydrate	7791-18-6	0.08 %	NA	R36/37/38	OM2975000
5. Water	7732-18-5	99.213 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

**4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.





# SAFETY DATA SHEET

## SIRT1 FRET Fluorophore

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<b>4.1.4 In Case of Ingestion:</b>	Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
<b>4.2 Important Symptoms and Effects, Both Acute and Delayed:</b>	No data available.
<b>4.3 Indication of any immediate medical attention and special treatment needed:</b>	No data available.

### Section 5. Fire Fighting Measures

<b>5.1 Suitable Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
<b>Unsuitable Extinguishing Media:</b>	A solid water stream may be inefficient.
<b>5.2 Flammable Properties and Hazards:</b>	No data available.
<b>Flash Pt:</b>	No data.
<b>Autoignition Pt:</b>	No data available.
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Hazardous Combustion Products:</b>	No data available.
<b>5.3 Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

<b>6.1 Protective Precautions, Protective Equipment and Emergency Procedures:</b>	Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
<b>6.2 Environmental Precautions:</b>	Take steps to avoid release into the environment, if safe to do so.
<b>6.3 Methods and Material For Containment and Cleaning Up:</b>	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

<b>7.1 Precautions To Be Taken in Handling:</b>	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
<b>7.2 Precautions To Be Taken in Storing:</b>	Keep container tightly closed. Store in accordance with information listed on the product insert.
<b>Hazard Label Information:</b>	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. N-Methylantranilic acid	119-68-6	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. N-Methylantranilic acid	119-68-6	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. DL-Dithiothreitol	3483-12-3	No data.	No data.	No data.
4. Magnesium chloride, hexahydrate	7791-18-6	No data.	No data.	No data.
5. Water	7732-18-5	No data.	No data.	No data.

<b>Protective Equipment Summary - Hazard Label Information:</b>	Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood
<b>8.2.1 Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>8.2.2.1 Eye Protection:</b>	Safety glasses
<b>8.2.2.2 Protective Gloves:</b>	Compatible chemical-resistant gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>8.2.2.3 Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.
<b>8.2.3 Environmental Exposure Controls:</b>	No data available.

## Section 9. Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

<b>Physical States:</b>	<input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid
<b>Appearance and Odor:</b>	Solution
<b>pH:</b>	8.8
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.

### 9.2 Other Information

<b>Percent Volatile:</b>	No data.
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## Section 10. Stability and Reactivity

<b>10.1 Reactivity:</b>	No data available.
<b>10.2 Stability:</b>	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
<b>10.3 Stability Note(s):</b>	Stable if stored in accordance with information listed on the product insert.
<b>10.4 Conditions To Avoid:</b>	No data available.
<b>10.3 Polymerization:</b>	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
<b>10.5 Incompatibility - Materials To Avoid:</b>	No data available.
<b>10.6 Hazardous Decomposition Or Byproducts:</b>	No data available.

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.

**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. N-Methylantranilic acid	119-68-6	n.a.	n.a.	n.a.	n.a.
2. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
3. DL-Dithiothreitol	3483-12-3	n.a.	n.a.	n.a.	n.a.
4. Magnesium chloride, hexahydrate	7791-18-6	n.a.	n.a.	n.a.	n.a.
5. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

### Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.  
Runoff from fire control or dilution water may cause pollution.

### Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**14.1 LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**14.3 AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

**European Community Hazard Symbol codes**

No data available.

**European Community Risk and Safety Phrases**

S24/25 - Avoid contact with skin and eyes.

S37/39 - Wear suitable gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. N-Methylantranilic acid	119-68-6	No	No	No	No
2. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
3. DL-Dithiothreitol	3483-12-3	No	No	No	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. N-Methylantranilic acid	119-68-6	No	No	Inventory	No
2. Trizma base	77-86-1	HAP	No	Inventory	No
3. DL-Dithiothreitol	3483-12-3	No	No	Inventory	No
4. Magnesium chloride, hexahydrate	7791-18-6	No	No	No	No
5. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

### Section 16. Other Information

**Revision Date:** 05/30/2013

**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required